

# BX50 MID / BX50 MID F / BX50 MID C

EN

INSTRUCTIONS  
ENERGY CONSUMPTION  
MEASURING DEVICE



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**Information on the use of these instructions**

**Symbols**



**Warning of electrical voltage**

This symbol indicates dangers to the life and health of persons due to electrical voltage.



**Warning**

This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.



**Caution**

This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

**Notice**

This signal word indicates important information (e.g. material damage), but does not indicate hazards.



**Info**

Information marked with this symbol helps you to carry out your tasks quickly and safely.



**Follow the manual**

Information marked with this symbol indicates that the instructions must be observed.

You can download the current version of the instructions and the EU declaration of conformity via the following link:



BX50 MID



<https://hub.trotec.com/?id=43926>

**Safety**

**Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.**



**Warning**

**Read all safety warnings and all instructions.**

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

**Save all warnings and instructions for future reference.**

- The device is supplied with a warning sign. Prior to initial start-up, make sure to paste the corresponding warning sign in your local language over the one present at the rear of the device.

**Do not plug in line!**  
**For use in dry rooms only!**  
**Voltage-free only with plug disconnected!**  
**Do not cover during operation!**

- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in aggressive atmosphere.
- Do not immerse the device in water. Do not allow liquids to penetrate into the device.
- Protect the device from permanent direct sunlight.
- Do not cover the device! With a higher power input the device will warm up. Covering the device may cause overheating and consequently may cause a fire!
- Do not open the device.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Check the device for potential damage before each application. Do not use any defective devices.
- Do not connect several devices by plugging one into another.
- Only operate the device in dry surroundings.

- Please note that the device is only de-energized when the plug has been disconnected from the mains.
- Observe the storage and operating conditions (see Technical data).

### Intended use

Only use the device for measurements on circuits directly connected to the low-voltage grid via a plug connection, e. g. household appliances, portable electrical appliances etc., whilst adhering to the technical data.

Any use other than the intended use is regarded as misuse.

### Reasonably foreseeable misuse

The device is not suitable for use with any type of extension cables. The device may not be used in potentially explosive atmospheres, when wet or very humid.

### Personnel qualification

People who use this device must:


- have read and understood the instructions, especially the Safety chapter.

### Safety signs and labels on the device

#### Notice

Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.

The following safety signs and labels are attached to the device:

	<p><b>For indoor use only</b> This symbol indicates the following: Only use the device in dry interior spaces, not in outdoor areas.</p>
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### Residual risks



#### Warning of electrical voltage

Electric shock due to insufficient insulation! Check the device for damages and proper functioning before each use.

If you detect damages, do not use the device any longer.

Do not use the device when either the device or your hands are damp or wet!

Do not use the device when the battery compartment or the housing is open.



#### Warning of electrical voltage

There is a risk of a short-circuit due to liquids penetrating the housing!

Do not immerse the device and the accessories in water. Make sure that no water or other liquids can enter the housing.



#### Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!



#### Warning

Risk of suffocation!

Do not leave the packaging lying around. Children may use it as a dangerous toy.



#### Warning

The device is not a toy and does not belong in the hands of children.



#### Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!



#### Caution

Keep a sufficient distance from heat sources.

#### Notice

To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.

#### Notice

Do not use abrasive cleaners or solvents to clean the device.

**Information about the device**

**Device description**

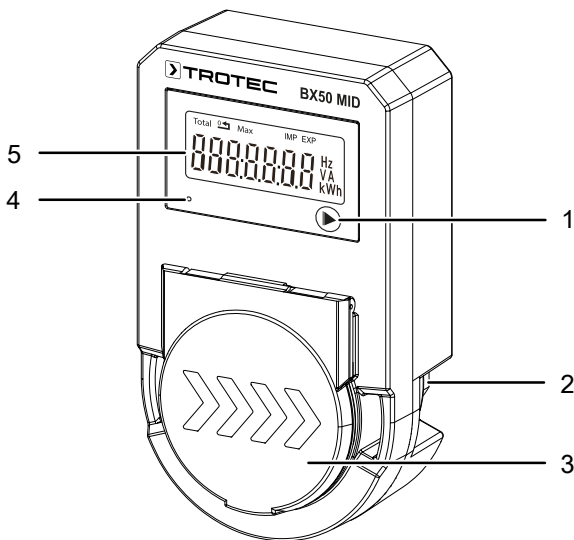
The device BX50 MID can measure the energy demand of a connected terminal device or the energy production of a power generator, e.g. a solar module. The device is MID-calibrated and cannot be manipulated.

The device can display the following values:

- Total counter reading Energy flow (production and consumption) (kWh, non-resettable)
- Counter reading Energy flow (production and consumption) (kWh, resettable)
- Total counter reading Production (kWh, non-resettable)
- Counter reading Production (kWh, resettable)
- Total counter reading Consumption (kWh, non-resettable)
- Counter reading Consumption (kWh, resettable)
- Current voltage (V)
- Current amperage (A)
- Current power consumption of the connected device (W)
- Power factor
- Current mains frequency (Hz)
- Highest previously measured power consumption in watts (resettable)

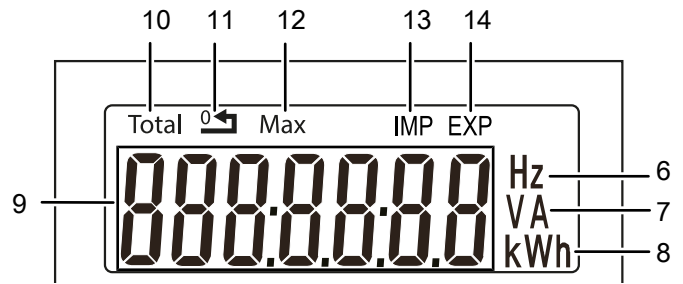
The device comes with display illumination in order to enhance the legibility.

**Device depiction**



No.	Designation
1	Menu button
2	Connection to socket
3	Connection for the terminal device (plug adapter)
4	LED pulse frequency
5	Display

**Display**



No.	Designation	Meaning
6	Hz indication	Unit of the displayed alternating current frequency
7	V/A indication	Unit of the displayed voltage (V)/ amperage (A)
8	W/kWh indication	Unit of the displayed consumed/ generated electricity
9	Measured value display	Current measured value or counter reading
10	Total indication	The counter reading of the energy flow is displayed.
11	↺ indication	The displayed counter reading can be reset.
12	Max indication	The highest measured consumption is displayed.
13	IMP indication	The production counter reading is displayed.
14	EXP indication	The consumption counter reading is displayed.

## Technical data

Parameter	Value
Model	BX50 MID
Weight (packaging excluded)	approx. 155 g
Dimensions (length x width x height)	approx. 119 x 68 x 77 mm (with plug)
Display	LCD with background illumination
Power supply	230 V AC, $\circ$ single-phase, 50/60 Hz
Power consumption	10 VA
Power loss	< 2 W
Measuring range	0.25 to 5 (16) A
Basic current (I <sub>b</sub> )	5 A
Starting current	0.004 I <sub>b</sub>
Accuracy class	1 / <b>B</b>
Protection class	II / $\square$
Indicator resolution	0 to 999999.9 kWh 0 to 999999.9 W
Operating conditions	-25 °C to 55 °C 0 % RH to 95 % RH (non-condensing)
Storage conditions	-40 °C to 70 °C, 0 % RH to 95 % RH (non-condensing)
Measuring category	CAT II
Pulse frequency (LED)	1000 impulses/kWh
Type of protection	IP54
MID certification	yes

## Information on calibrating the device

The device has a MID Declaration of Conformity which replaces the initial calibration by a calibration authority. The validity of this declaration expires 8 years after placing on the market. Afterwards the user of the measuring device is obliged to have the device recalibrated. Further information can be obtained from your national calibration authority.

### Notice

If you are in the position as measuring instrument operator or if you have been assigned by the measuring instrument operator to record measured values, you shall, depending on the intended purpose, register the usage of new or renewed measuring devices to your responsible calibration authority within 6 hours after initial operation. In this case, please contact your national verification authority.

To manage the MID devices used, you will find a ready-made form in the appendix or under: <https://hub.trotec.com/?id=43926>

### Scope of delivery

- 1 x Energy cost measuring device BX50 MID
- 1 x Quick guide

## Transport and storage

### Notice

If you store or transport the device improperly, the device may be damaged.

Note the information regarding transport and storage of the device.

## Transport

When transporting the device, ensure dry conditions and protect the device from external influences e.g. by using a suitable bag.

## Storage

When the device is not being used, observe the following storage conditions:

- dry and protected from frost and heat
- protected from dust and direct sunlight
- the storage temperature complies with the values specified in the Technical data

## Operation

### Switching the device on

1. Plug the device into a properly fused socket.
2. Connect the terminal device to the plug adapter (3).  
⇒ The device is switched on.

### Changing the display mode

The following values can be indicated on the display (5) one after the other:

- Total counter reading Energy flow (production and consumption) (kWh, non-resettable)
  - Counter reading Energy flow (production and consumption) (kWh, resettable)
  - Total counter reading Production (kWh, non-resettable)
  - Counter reading Production (kWh, resettable)
  - Total counter reading Consumption (kWh, non-resettable)
  - Counter reading Consumption (kWh, resettable)
  - Current mains voltage (V)
  - Current amperage (A)
  - Current power consumption of the connected device (W)
  - Power factor
  - Current mains frequency (Hz)
  - Highest previously measured power consumption in watts (resettable)
1. Press the menu button (1) until the desired display mode is set.

### Switching on the display illumination

1. Press the menu button (1) for approx. 3 seconds in any display mode.  
⇒ The display illumination will be switched on.


It automatically switches off after approx. 20 s.

### Internal memory

The device is equipped with an internal memory that stores the total energy consumption and the total energy production as well as the resulting total energy flow even when the device is not connected to the mains. These counters cannot be manipulated and can therefore neither be deleted nor changed.

### Resetting the counters

The device comes with a resettable counter for energy production, energy consumption and the cumulated energy flow. The resettable counters can be set to zero as follows:

- ✓ The display illumination is switched on.
  - ✓ The desired, resettable counter reading is displayed. If the counter reading can be reset, the display shows  (11).
1. Press the menu button (1) for approx. 3 seconds.  
⇒ The measured value display (9) is set to zero.  
⇒ The counting starts again.

### Resetting the highest previously measured power consumption

- ✓ The display illumination is switched on.
  - ✓ The highest previously measured power consumption is displayed (*Max* indication (12)).
1. Press the menu button (1) for approx. 3 seconds.  
⇒ The measured value display (9) is set to zero.  
⇒ The highest previously measured power consumption will be recounted.

### Taking the device out of operation

1. Disconnect the terminal device from the plug adapter (3).
2. Completely disconnect the device from the mains.
3. Store the device according to the Storage chapter.

## Maintenance and repair

### Cleaning

Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners, but only clean water to moisten the cloth.

### Repair

Do not modify the device or install any spare parts. For repairs or device testing, contact the manufacturer.

## Errors and faults

Fault	Remedy
The device display indicates unusual characters or values.	Disconnect the device from the mains and reconnect it after a brief period of time. Please contact the Trotec customer service if the problem persists.
The device does not respond to the push of a button.	You may have pressed the menu button (1) too hard. Vary the pressure to determine the appropriate pressure level. If necessary, briefly stroke the menu button to activate it. Please contact the Trotec customer service if the problem persists.

## Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.



The icon with the crossed-out waste bin on waste electrical or electronic equipment is taken from Directive 2012/19/EU. It states that this device must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website <https://hub.trotec.com/?id=45090>. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.

### Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

## Overview of the MID measuring devices used

Use the following table to manage the MID devices used.

No.	Manufacturer	Type designation	Year in which the measuring device has been designated	Address of person using the measuring device
1				
2				
3				
4				
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6				
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8				
9				
10				
11				
12				
13				
14				
15				

## Declaration of conformity

The device has a factory calibration which replaces the initial calibration by a calibration authority. This is certified by a MID Declaration of Conformity according to EU Directive 2014/32/EU. The validity of this declaration expires 8 years after placing on the market. Afterwards the user of the measuring device is obliged to have the device recalibrated. The year of initial calibration is indicated on the device after the CE mark. Example:



**M24:** The device was manufactured and first calibrated in 2024. If the device is also placed on the market in 2024, the calibration validity ends at the end of 2032. If the device is not placed on the market until 2025, the calibration validity ends at the end of 2033.

**0598:** Number of the accredited calibration laboratory. Here: SGS

The following page shows the original declaration of conformity certifying compliance with the relevant regulation.



### Declaration of conformity

In accordance with the European Measuring Instruments Directive 2014/32/EU, Annex II, Part 4

Herewith, we declare that the measuring device designated below complies with all provisions of the EU Measuring Instruments Directive as amended in 2014/32/EU.

Measuring device type	Energy consumption measuring device
Machine no. / designation	BX50 MID, BX50 MID F, BX50 MID C
Year of manufacture as of	05/2024
Notified body	Notified body No. 0598: SGS Fimko Ltd., Takomotie 8, FI-00380 Helsinki, Finland has performed the examination in accordance with 2014/32/EU, Module B and issued the following certificate: 0598/SGS0449 of 23/04/2020.
Relevant EU directives	Directive 2014/32/EU relating to the making available on the market of measuring instruments as amended on 26 February 2014
	Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment as amended on 23 November 2012
	Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU
	Directive 2014/30/EU on electromagnetic compatibility as amended on 26 February 2014
	Directive 2012/19/EU on waste electrical and electronic equipment
Applied harmonised Standards	EN 50470-1:2006 EN 50470-3:2006 EN 61326-1:2013 EN 61000-3-2:2014 EN 61000-3-3:2013
Other standards and technical specifications applied	EN 55011:2016+A1:2017 EN 61000-4-2:2009 EN 61000-4-3:2006+A1:2008+A2:2010 EN 61000-4-4:2012 EN 61000-4-5:2014+A1:2017 EN 61000-4-6:2014/AC:2015-06 EN 61000-4-11:2004+A1:2017 IEC 62321-2:2013 IEC 62321-3-1:2013 IEC 62321-4:2013 IEC 62321-5:2013 IEC 62321-6:2015 IEC 62321-7-1:2015 IEC 62321-7-2:2017 IEC 62321-8:2017 Regulation (EG) No. 1907/2006 (REACH)
Manufacturer and name of the authorised representative of the technical documentation	Trotec GmbH Grebbener Strasse 7 DE52525 Heinsberg

Place and date of issue:  
Heinsberg, 2 April 2024



Joachim Ludwig, Managing Director



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